

ADDITIONAL NOTES ON THE GENUS CITHAREXYLUM. XIII

Harold N. Moldenke

CITHAREXYLUM COOPERI Standl.

Additional bibliography: Moldenke, *Phytologia* 40: 492. 1978.

Recent collectors have found this plant growing on steep slopes with Montane Rainforest vegetation and on limestone-fissured ridges on the Lower Montane Rainforest with Quercus, Billia, Persea, Nectandra, Mirandaceltis, Turpinia, and Calatola, at 800—900 meters altitude, fruiting in September and October. Material has been misidentified and distributed in some herbaria as C. crassifolium Greenm., C. hexangulare Greenm., and C. hirtellum Standl.

The Dodson 6002, distributed as perhaps C. cooperi, actually is C. poeppigii Walp., while Breedlove 20250 appears better placed as C. hexangulare var. latifolium Moldenke.

Additional citations: MEXICO: Chiapas: Breedlove 28145 (Mi, N); Breedlove & Thorne 20954 (Mi).

CITHAREXYLUM CRASSIFOLIUM Greenm.

Additional bibliography: Moldenke, *Phytologia* 31: 338 & 348 (1975) and 32: 196 & 219. 1975.

Breedlove encountered this species in a montane rainforest with Hauya, Pinus, Clusia, Ficus, Persea, and Calatola, at 800 m. altitude, fruiting in February.

Material of C. crassifolium has been misidentified and distributed in some herbaria as C. donnell-smithii Greenm. On the other hand, the Breedlove 28145, distributed as C. crassifolium, actually is C. cooperi Standl., while Steyermark 43219 is C. donnell-smithii Greenm. and Steyermark 42840 & 42845 are C. steyermarkii Moldenke.

Additional citations: MEXICO: Chiapas: Breedlove 33023 (Mi, Mi).

CITHAREXYLUM DAWEI Moldenke

This taxon is now regarded as conspecific with C. karsteni Moldenke, which see.

CITHAREXYLUM DECORUM Moldenke

Additional bibliography: López-Palacios, *Bol. Soc. Venez. Cienc. Nat.* 31: 354—355, 358, 371, & 373—375. 1975; Moldenke, *Phytologia* 31: 348—350 & 449. 1975; López-Palacios, *Fl. Venez. Verb.* 224—227 & 647, fig. 50. 1977; R. F. Sm., *Act. Bot. Venez.* 13: 193, 205, & 264. 1978.

Illustrations: López-Palacios, *Fl. Venez. Verb.* [226], fig. 50. 1977; R. F. Sm., *Act. Bot. Venez.* 13: 264. 1978.

Blanco describes the fruit of this species as "reddish-green",

found it in fruit in August, and reports the vernacular name, "cazabito". Smith (1978) records the species from Lara, Venezuela, and list the name, "cuatro filas", for it.

López-Palacios (1977) cites from Venezuela: Falcón: Lasser & Foldats 3087. Federal District: López-Palacios 3087. Lara: R. T. Smith V.869. Trujillo: Pittier 10738, 10769, 12656. Yaracuy: Blanco 914.

Additional citations: VENEZUELA: Yaracuy: C. A. Blanco 914 (W-2777195).

CITHAREXYLUM DENTATUM D. Don

Additional bibliography: Buek, Gen. Spec. Syn. Candoll. 3: 104. 1858; G. Don in Loud., Hort. Brit., ed. 1, 248 (1830), ed. 2, 248 (1832), and ed. 3, 248, 1839; Moldenke, Phytologia 31: 350 & 394 (1975) and 32: 63. 1975; Soukup, Biota 11: 9. 1976; Moldenke, Phytologia 36: 33. 1977.

Ellenberg encountered this plant in evergreen high montane bush-woods at 2825 meters altitude.

Additional citations: PERU: Junin: Ellenberg 3760 (Z).

CITHAREXYLUM DISCOLOR Turcz.

Additional bibliography: López-Palacios, Bol. Soc. Venez. Cienc. Nat. 31: 386. 1975; Moldenke, Phytologia 31: 345 & 350-351. 1975.

Additional citations: HISPANIOLA: Dominican Republic: Ekman H.12773 (Ld).

CITHAREXYLUM DONNELL-SMITHII Donn. Sm.

Additional bibliography: Moldenke, Phytologia 31: 346, 348, & 351-352 (1975) and 32: 54 & 70. 1975; Molina R., Ceiba 19: 95. 1975; Anon., Biol. Abstr. 61: AC1.580. 1976.

Recent collectors describe this species as a tree, 20-40 feet tall, the leaves firmly membranous, rich-green and shiny above, lighter grass-green beneath, the inflorescences nodding, the flowers sweet-smelling, and the calyx pale-green. They encountered it in ravines, on and along rounded slopes, on steep, and on steep and heavily wooded slopes with Quercus and Drimys, in evergreen cloud-forests or montane rainforests, at altitudes of 800-2700 meters, fruiting in January and August. Taylor reports its use to produce shade in coffee plantations. The corollas are said to have been "white" on Breedlove & Thorne 21078 and on Steyermark 43219.

Material of this species has been misidentified and distributed in some herbaria as C. crassifolium Greenm. and C. hexangulare Greenm. On the other hand, the Dwyer & Coomas 12928, distributed as C. donnell-smithii, actually is C. hexangulare Greenm., while Mori & Dressler 7773 is C. macradenium Greenm. and Steyermark 42840 & 42845 are C. steyermarkii Moldenke.

Additional citations: MEXICO: Chiapas: Breedlove 26817 (Ld, Mi),

29207 (Ld, N), 41453 (N); Breedlove & Raven 13743 (Ld); Breedlove & Smith 32080 (Mi); Breedlove & Thorne 21078 (Mi); Laughlin 153 (Ld); Ton 3888 (Ld). GUATEMALA: Zacapa: J. A. Steyermark 43219 (N). COSTA RICA: Alajuela: Kupper 935 (Mu). San José: J. Taylor 17539 (N, W--2770968). PANAMA: Chiriquí: Croat 26974 (W--2788962); A. Gentry 6004 (Ld); Proctor 31956 (Ld).

CITHAREXYLUM DRYANDERAE Moldenke

Additional bibliography: López-Palacios, Bol. Soc. Venez. Cienc. Nat. 31: 366. 1975; Moldenke, Phytologia 31: 353 (1975) and 32: 225. 1975.

CITHAREXYLUM ELLIPTICUM Sessé & Moc.

Additional bibliography: Buek, Gen. Spec. Syn. Candoll. 3: 105. 1858; Moldenke, Phytologia 32: 49 & 70. 1975.

The Davidse found this species growing on dunes with scattered low trees and shrubs and with grassy areas dominated by Sporobolus jacquemontii, at 40 meters altitude, and describe the fruit as "turning red". Others have found it among dense dune vegetation at sealevel and describe it as "bushy, 7 feet tall", flowering in November. The corollas are said to have been "white" on King 1143 & 2706, Lasseigne 4912, Thorne & Lathrop 40477, and Ventura A. 5395.

Linden 71 is a mixture of C. ellipticum and Iresine celosioides, Isachne ventricosa, and Pilea pubescens, while Paxson, Webster, & Barkley 174626, distributed as C. ellipticum, is not verbenaceous.

Additional citations: MEXICO: Veracruz: Davidse & Davidse 9329 (Ld); R. M. King 1093 (Au--211646, Ld), 1143 (Au--211641, Ld), 2706 (Au--184959); Lasseigne 4912 (Mi, N); Linden 71 in part (Mi); Thorne & Lathrop 40477 (Ld); Troll 64 (Mu); Ventura A. 5395 (Au).

CITHAREXYLUM FLABELLIFOLIUM S. Wats.

Additional bibliography: Moldenke, Phytologia 31: 354. 1975; Felger & Lowe, Nat. Hist. Mus. Los Angeles Co. Contrib. Sci. 285: 7. 1976.

Moran describes this plant as a stiff shrub to 1.7 m. tall, with a spread of 4 m., stout spinose branches, and "purple" corollas with darker veins. It has been collected in fruit in September (in addition to the months previously reported).

Additional citations: MEXICO: Sonora: D. F. Howe s.n. [24 September 1967] (Sd--80737). GULF OF CALIFORNIA ISLANDS: Carmen: R. V. Moran 18185 (Sd--76747).

CITHAREXYLUM FLEXUOSUM (Ruiz & Pav.) D. Don

Additional synonymy: Citharexylum flexuosum D. Don apud Schau. in A. DC., Prodr. 11: 610, in syn. 1847.

Additional bibliography: Buek, Gen. Spec. Syn. Candoll. 3: 105 & 147. 1858; Moldenke, Phytologia 31: 338, 339, & 354--355 (1975)

and 32: 227. 1975; Anon., Biol. Abstr. 61: AC1.580. 1976; Soukup, Biota 11: 9. 1976; Moldenke, Phytologia 36: 41. 1977.

CITHAREXYLUM FRUTICOSUM L.

Additional synonymy: Citharexylon arbor americana, etc. Pluk. apud López-Palacios, Fl. Venez. Verb. 228, in syn. 1977. Citharexylon arbor laurifolia, americana, etc. Pluk. apud López-Palacios, Fl. Venez. Verb. 228, in syn. 1977. Citharexylon caudatum Sagra apud López-Palacios, Fl. Venez. Verb. 228, in syn. 1977. Citharexylon cinereum Sessé & Moc. apud López-Palacios, Fl. Venez. Verb. 228, in syn. 1977. Citharexylon fruticosum, cortice cinereo, etc. P. Browne apud López-Palacios, Fl. Venez. Verb. 228, in syn. 1977. Citharexylon quadrangulare Griseb. apud López-Palacios, Fl. Venez. Verb. 228, in syn. 1977. Citharexylon villosum Champ. apud López-Palacios, Fl. Venez. Verb. 228, in syn. 1977. Citharexylon villosum Griseb. apud López-Palacios, Fl. Venez. Verb. 228, in syn. 1977. Citharexylon spicatum Ryam apud López-Palacios, Fl. Venez. Verb. 228, in syn. 1977. Citharexylon villosum var. glaberrimum C. Wright apud López-Palacios, Fl. Venez. Verb. 228, in syn. 1977. Citharexylon arbor americana [Pluk.] apud López-Palacios, Fl. Venez. Verb. 647. 1977. Citharexylon arbor laurifolia [Pluk.] apud López-Palacios, Fl. Venez. Verb. 647. 1977. Citharexylon fruticosum, cortice cinereo, etc. P. Browne apud López-Palacios, Fl. Venez. Verb. 228, in syn. 1977. Citharexylum fruticosum cortice cinereo [P. Browne] apud López-Palacios, Fl. Venez. Verb. 647, in syn. 1977. Citharexylum spicatum [Ryam] apud López-Palacios, Fl. Venez. Verb. 647, in syn. 1977.

Additional bibliography: Sweet, Hort. Brit., ed. 1, 1: 323 (1826) and ed. 2, 417. 1830; G. Don in Loud, Hort. Brit., ed. 1, 248 (1830) and ed. 2, 248. 1832; Loud., Hort. Brit., ed. 2, 551. 1832; G. Don in Loud., Hort. Brit., ed. 3, 248. 1839; Sweet, Hort. Brit., ed. 3, 551. 1839; Buak, Gen. Spec. Syn. Candoll. 3: 104. 1858; M. F. Baker, Fla. Wild Fls., ed. 2, imp. 1, 190. 1938; Perez-Arbelaez, Fl. Util. Colomb., ed. 2, 741. 1956; R. W. Long, Fla. Sci. 37: 35. 1974; Dod & Fortuna, Bot. Jard. Bot. Moscoso 2 (3): 16. 1975; López-Palacios, Bol. Soc. Venez. Cienc. Nat. 31: [353], 355—358, 361, 363, 364, 369, 370, 372, & 375—379. 1975; Zimmerm. & Ziegler in Zimmer. & Milburn, Transp. Pl. 1 [Pirson & Zimmer., Encycl. Pl. Physiol., ser. 2, 1]: 502. 1975; Moldenke, Phytologia 32: 49, 53, 57, 59, 62, 64, 65, 196, & 200 (1975) and 34: 248, 253, & 254. 1976; Anon., Biol. Abstr. 61: AC1: 580. 1976; M. F. Baker, Fla. Wild Fls., ed. 2, imp. 2, 190. 1976; Crowell & Crowell, Nat. Hist. 85 (8): 53. 1976; Hocking, Excerpt. Bot. A.28: 258. 1976; Long & Lakela, Fl. Trop. Fla., ed. 2, 738, 934, & 939. 1976; Jiménez & Liogier, Moscosoa 1 (2): 19. 1977; Liogier, Bol. Jard. Bot. Raf. Mosc. 4: 5. 1977; López-Palacios, Fl. Venez. Verb. 220—222, 228—234, & 647, fig. 51. 1977; Moldenke, Biol. Abstr. 64: 6574. 1977; Moldenke, Phytologia 36: 31, 39, & 164.

1977; Poppeton, Shuey, & Sweet, Fla. Scient. 40: 384. 1977; Powell, Econ. Bot. 31: 419 & 422. 1977; Liogier, Moscosoa 1: 37. 1978; Moldenke, Phytologia 40: 488. 1978.

Additional illustrations: Crowell & Crowell, Nat. Hist. 85 (8): 53 [in color]. 1976; López-Palacios, Fl. Venez. Verb. [229], fig. 51. 1977.

Recent collectors describe this plant as a shrub, 2 meters tall, or a tree, 8 feet tall, the flowers with the scent of lilac (Syringa vulgaris), the fruit drupaceous, at first green, then turning orange or vermillion, finally black, fleshy, glossy. They have found it growing in open coppices and on ridge tops in brushy vegetation along roadsides, flowering in May and June. Adams erroneously refers to the fruit as "berries". Fosberg found the plant "occasional". The corollas are said to have been "white" on Austin & Conroy 4744, Correll & Proctor 48907, and J. J. Jiménez 8341.

Don (1830), Sweet (1830), and Loudon (1832) all list this species as cultivated in British gardens in their day, introduced from the West Indies in 1739 and known as the "ash-coloured fiddle-wood". Liogier (1978) cites Liogier 23033.

The Correll, Campbell, & Sprount 47248, Correll & Evans 44012, and Correll & Wasshausen 46717, distributed as typical C. fruticosum, are actually f. bahamense (Millsp. Moldenke, while J. A. Churchill s.n. [19 December 1968] and D. S. Correll 45477 are f. subvillosum (Moldenke) Moldenke, J. A. Churchill s.n. [8 May 1969] is var. villosum (Jacq.) O. E. Schulz, Correll & Hill 45337 is C. caudatum L., Thorne & Lathrop 40477 is C. ellipticum Sessé & Moc., C. D. Adams 11364 is C. xhybridum Moldenke, and Proctor 28135 and Wilbur, Dunn, Hespenheide, & Wiseman 8236 are C. spinosum L.

Jiménez encountered the species at 550 meters altitude in the Dominican Republic. Liogier (1978) records the vernacular name, "penda", while López-Palacios, in a personal communication to me, records "cajuaro" from Venezuela. This distinguished worker also (1977) cites from Venezuela the following: Falcón: Breteler 4314; Madriz 30; Ruiz-Terán 2080; Ruiz-Terán & López-Palacios 10231. Sucre: Aristeguieta & Agostini 4769; Broadway 118; Ruiz-Terán & López-Palacios 9891.

Additional citations: FLORIDA: Dade Co.: Meebold 27574 (Mu, Mu). BAHAMA ISLANDS: Crooked: D. S. Correll 44357 (N); Correll & Proctor 48907 (N). Inagua: Austin & Conroy 4744 (N). TURKS AND CAICOS ISLANDS: North Caicos: Buden 2 (Lv). JAMAICA: C. D. Adams 8884 (Mu). HISPANIOLA: Dominican Republic: J. J. Jiménez 8341 (N). Haiti: Ekman H.8340 (Ld). PUERTO RICO: Stimson 3025 (Ld). VIRGIN ISLANDS: St. Croix: Fosberg & Ogden 55329 (W—2743953).

CITHAREXYLUM FRUTICOSUM f. BAHAMENSE (Millsp.) Moldenke

Additional bibliography: Moldenke, Phytologia 31: 448—449 &

453 (1975), 34: 253 (1976), and 36: 31. 1977.

Recent collectors describe this plant as a shrub, tree, or sapling, 3 m. tall, growing "in a coppice on a rise above mangrove swamps", flowering in June, fruiting in February and December, the mature fruit black.

Additional citations: BAHAMA ISLANDS: Acklin: Correll, Campbell, & Sprunt 47248 (N). North Andros: Correll & Evans 44012 (N). San Salvador: Correll & Wasshausen 46717 (N, W—2797479). CULTIVATED: Morocco: Lewalle 8582 (Z).

CITHAREXYLUM FRUTICOSUM var. BRITTONII Moldenke

Additional synonymy: Citharexylum brittoni [Moldenke] apud López-Palacios, Fl. Venez. Verb. 647, in syn. 1977.

Additional bibliography: López-Palacios, Bol. Soc. Venez. Cienc. Nat. 31: [353], 357—358, 373, & 378—379. 1975; Moldenke, Phytologia 31: 449. 1975; López-Palacios, Fl. Venez. Verb. 224, 232—234, & 647, fig. 52. 1977.

Illustrations: López-Palacios, Fl. Venez. Verb. [233], fig. 52. 1977.

Philcox and his associates call this plant a shrub, 1.5 m. tall, the fruit (in July) "ripening dull dark-orange", and found it growing on a beach, misidentifying it as var. subvillosum Moldenke.

López-Palacios (1977) cites from Venezuela the following collections: Anzoátegui: Karsten s.n. Bolívar: Steyermark 86556, 88236, 88829. Delta Amacuro: Curran & Haman 1309, 1316. Federal District: Delgado 421. In a personal communication to me he lists "coralito" as a vernacular name in Venezuela.

Additional citations: TRINIDAD AND TOBAGO: Trinidad: Philcox, Wood, & Kalbo 7452 (N).

CITHAREXYLUM FRUTICOSUM var. SMALLII Moldenke

Additional bibliography: Moldenke, Phytologia 31: 448 & 450 (1975) and 34: 253. 1976.

Recent collectors refer to this as a 4-meter tall sapling, very fructiferous, and found it growing in open coppices, fruiting in January.

Additional & emended citations: BAHAMA ISLANDS: North Andros: Correll, Saulea, Stevenson, Miller, & Fehling 49343 (N). South Andros: D. S. Correll 43484 (Ld, Ld, N), 43516 (Ld, N, Z).

CITHAREXYLUM FRUTICOSUM f. SUBSERRATUM (Sw.) Moldenke, Phytologia 36: 164. 1977.

Additional bibliography: Sweet, Hort. Brit., ed. 1, 1: 323 (1826) and ed. 2, 417. 1830; G. Don in Loud., Hort. Brit., ed. 1, 248 (1830) and ed. 2, 248. 1832; Loud., Hort. Brit., ed. 2, 551. 1832; G. Don in Loud., Hort. Brit., ed. 3, 248. 1839; Sweet, Hort. Brit., ed. 3, 551. 1839; Buek, Gen. Spec. Syn. Candoll. 3: 105. 1858; Moldenke, Phytologia 31: 450—451 (1975), 32: 198—200 (1975), and 36: 39 & 164. 1977; Moldenke, Biol. Abstr. 64: 6574. 1977.

Don (1830), Sweet (1830), and Loudon (1832) all list this plant

as growing in British gardens in their day, introduced from Hispaniola in 1819, and known as the "subserrate fiddle-wood". It seems most probable that this is merely a juvenile form of the species, since dentate leaves are seen on juvenile specimens and on watersprouts in other species of the genus. In line with current practice, it has seemed best to reduce the taxon from varietal to form rank. Its very limited distribution, however, as compared to the species as a whole, is perplexing and may possibly indicate something more than mere form rank. It has been encountered at altitudes of 375 to 1000 meters.

Additional citations: HISPANIOLA: Dominican Republic: Ekman H. 13025 (Ld). Haiti: Ekman H. 1372 (Ld).

CITHAREXYLUM FRUTICOSUM f. SUBVILLOSUM (Moldenke) Moldenke, Phytologia 36: 164. 1977.

Additional bibliography: Moldenke, Phytologia 32: 49 (1975), 34: 253 & 254 (1976), and 36: 164. 1977; Moldenke, Biol. Abstr. 64: 6574. 1977.

In line with current taxonomic practice, it has been thought best to reduce this taxon from varietal to form rank.

The Philcox, Wood, & Kalbo 7452, distributed as var. subvillosum, is perhaps better regarded as representing var. brittonii Moldenke, although the thick leaf-blades seem unusual for that taxon.

Additional citations: FLORIDA: Dade Co.: J. A. Churchill s.n. [19 December 1968] (Ln--230004). BAHAMA ISLANDS: Walker's: D. S. Correll 45477 (N). PUERTO RICO: Sintenis 720b (Ac). VIRGIN ISLANDS: St. Croix: Fosberg & Ogden 55329 (N). CULTIVATED: Morocco: Lewalle 8581 (Z).

CITHAREXYLUM FRUTICOSUM var. VILLOSUM (Jacq.) O. E. Schulz

Additional bibliography: Sweet, Hort. Brit., ed. 1, 1: 323 (1826) and ed. 2, 417. 1830; G. Don in Loud., Hort. Brit., ed. 1, 248 (1830), ed. 2, 248. 1832; Loud., Hort. Brit., ed. 2, 551. 1832; G. Don in Loud., Hort. Brit., ed. 3, 248. 1839; Sweet, Hort. Brit., ed. 3, 551. 1839; Buek, Gen. Spec. Syn. Candoll. 3: 105. 1858; Coult., Contrib. U. S. Nat. Herb. 2: 330. 1892; López-Palacios, Bol. Soc. Venez. Cienc. Nat. 31: 375. 1975; Moldenke, Phytologia 32: 49, 57, & 69 (1975), 34: 248 (1976), and 36: 39. 1977.

Churchill found this plant growing in sandy scrubland. Don (1830), Sweet (1830), and Loudon (1832) all list this plant as growing in British gardens in their day, introduced from the West Indies in 1784 and known as the "hairy-leaved fiddle-wood".

The C. villosum recorded by Coulter (1892) as from "Southern Texas and Mexico" actually is C. berlandieri B. L. Robinson. The Ekman H. 1372 & H. 13025, distributed as var. villosum, actually represent f. subserratum (Sw.) Moldenke.

Additional citations: FLORIDA: Biscayne Key: J. A. Churchill s.n. [8 May 1969] (Ln--229696).

CITHAREXYLUM GENTRYI Moldenke, *Phytologia* 35: 276. 1977.

Bibliography: Moldenke, *Biol. Abstr.* 64: 2433. 1977; Moldenke, *Phytologia* 35: 276 (1977) and 36: 33. 1977; Dodson & Gentry, *Selbyana* 4: xiii, 576, 578, 579, 605, & 615, pl. 271B. 1978.

Illustrations: Dodson & Gentry, *Selbyana* 4: 579, pl. 271B. 1978.

Collectors describe this species as a large tree, to 20 m. tall, and have found it growing on riverbanks, at 150—300 m. altitude, flowering in October, fruiting in July. Dodson & Gentry (1978) cite Dodson & al. 6002, 6348, & 6575 from Los Ríos, Ecuador.

Citations: ECUADOR: Los Ríos: Dodson & Gentry 6348 (Ld), 6575 (Z—type). Napo: Grubb, Lloyd, Pennington, & Whitmore 176 (N).

CITHAREXYLUM GLABRUM (S. Wats.) Greenm.

Additional bibliography: Hinton & Rzedowski, *Anal. Esc. Nac. Cienc. Biol.* 21: 48. 1975; Moldenke, *Phytologia* 31: 453. 1975.

CITHAREXYLUM GLAZIOVII Moldenke

Additional bibliography: Moldenke, *Phytologia* 31: 453 (1975) and 32: 195. 1975.

CITHAREXYLUM GLEASONIANUM Moldenke

Additional bibliography: Moldenke, *Phytologia* 31: 453 (1975) and 40: 488. 1978.

Recent collectors describe this as a "regular" tree, 2 m. tall, with green fruit in July, and have encountered it in primary oak woods at 2300 m. altitude.

Material of C. gleasonianum has been misidentified and distributed in some herbaria as C. affine D. Don, a very closely related taxon. On the other hand, the Rosas R. 862, previously cited by me as C. gleasonianum, seems better placed as C. ligustrinum Van Houtte.

Additional citations: MEXICO: Veracruz: Kerber 258 (Mi); Nevling & Gomez-Pompa 2165 (N).

CITHAREXYLUM HERRERAЕ Mansf.

Additional bibliography: Moldenke, *Phytologia* 31: 454. 1975; Soukup 11: 9. 1976.

CITHAREXYLUM HEXANGULARE Greenm.

Additional bibliography: Schau. in A. DC., *Prodr.* 11: 613. 1847; Buek, *Gen. Spec. Syn. Candoll.* 3: 104. 1858; Moldenke, *Phytologia* 32: 49, 70, 226, & 227 (1975) and 40: 54. 1978.

Recent collectors describe this species as a tree, to 25 feet tall, and have found it in fruit in November on "a fissured limestone ridge in Lower Montane Rainforest with Quercus, Billia, Persea, Nectandra, Mirandaceltis, Turpinia, and Calatola". It has been encountered at 900—1000 meters altitude.

Linden 11 is a mixture of C. hexangulare, Pteris aculeata, and Salix bonplandiana. Material of C. hexangulare has been misidentified and distributed in some herbaria as C. donnell-smithii Greenm.

On the other hand, the Breedlove & Thorne 21078, distributed as C. hexangulare, actually is C. donnell-smithii Greenm., while Lundell & Lundell 76709 is C. hexangulare var. brevifolium Moldenke and Breedlove 20250, Breedlove & Thorne 30775, and Molina R., Williams, Burger, & Wallenta 17478 are C. hexangulare var. latifolium Moldenke.

Additional citations: MEXICO: Chiapas: Breedlove & Smith 21661 (Ld, Mi, N). Jalisco: R. McVaugh 20632 (Au—235467). Oaxaca: Santos 3818 (Au—263165). Veracruz: Linden 11 in part (Mi); Venturi A. 3333 (Au—303677). GUATEMALA: El Petén: Contreras 1831 (Au—228049). BELIZE: Dwyer & Coomes 12928 (W—2787796); Peck 567 (N).

CITHAREXYLUM HEXANGULARE var. BREVIFOLIUM Moldenke, *Phytologia* 40: 54. 1978.

Bibliography: Moldenke, *Phytologia* 40: 54. 1978.

The type collection of this taxon was previously cited by me as typical C. hexangulare Greenm., but examination of a large series of recent collections indicates that it is sufficiently different to warrant nomenclatural recognition, albeit only on the varietal level.

Citations: MEXICO: Quintana Roo: Lundell & Lundell 7679 (Ld—isotype, Mi—isotype, Mi—isotype, N—type).

CITHAREXYLUM HEXANGULARE var. LATIFOLIUM Moldenke, *Phytologia* 40: 54. 1978.

Bibliography: Moldenke, *Phytologia* 40: 54. 1978.

The material cited below has been distributed as and in some cases previously cited by me as C. cooperi Standl., C. hexangulare Greenm., or C. viride Moldenke. Collectors describe the plant as a tree, 6.5—10 m. tall, and have found it growing in cutover forest areas, in barrancas, and on fissured limestone ridges with Lower Montane Rainforest vegetation of Quercus, Billia, Persea, Nectandra, Mirandaceltis, Turpinia, and Calatola, at 900—1000 meters altitude, flowering in February and fruiting in October and December. The corollas are said to have been "white" on Molina R. & al. 17478.

This taxon needs further study, especially in its relationships to C. cooperi, C. hirtellum, and C. viride, all of which it closely resembles.

Citations: MEXICO: Chiapas: Breedlove 20259 (Ld, Mi, N); Breedlove & Thorne 30775 (Mi, N). COSTA RICA: Alajuela: Molina R., Williams, Burger, & Wallenta 17478 (N—type).

CITHAREXYLUM HIDALGENSE Moldenke

Additional bibliography: Hinton & Rzedowski, *Anal. Esc. Nac. Cienc. Biol.* 21: 48. 1975; Moldenke, *Phytologia* 31: 455 (1975) and 32: 63 & 200. 1975.

Recent collectors describe the fruits of this species as red and

translucent -- Moore & Wood erroneously refer to them as "berries". The plant has been encountered on "steep rocky slopes adjacent to streams" and "along streams at base of hillsides in forests below when Podocarpus reichii is abundant". It has been collected in fruit in August.

Additional citations: MEXICO: Hidalgo: Moore & Wood 4339 (Mi), 4500 (Mi); Pringle 8969 (Ln-69949--isotype). Puebla: Donoghue 28 (Ld); Gibson & Gibson 2587 (Ld); Reiche 717 (Mu).

CITHAREXYLUM HINTONI Moldenke

Additional bibliography: Hinton & Rzedowski, Anal. Esc. Nac. Cienc. Biol. 21: 31 & 48. 1975; Moldenke, Phytologia 31: 455. 1975.

CITHAREXYLUM HIRTELLUM Standl.

Additional bibliography: Moldenke, Phytologia 32: 49 & 226. 1975.

Recent collectors describe the flowers of this species as fragrant and have found it in anthesis in May. The corollas on Proctor 31976 are said to have been "white".

The Breedlove & Thorne 20954, distributed as C. hirtellum, seems better placed as C. cooperi Standl.

Additional citations: MEXICO: Chiapas: Breedlove & Raven 13625 (Ld). PANAMA: Chiriquí: Proctor 31976 (Ld).

CITHAREXYLUM xHYBRIDUM Moldenke

Additional bibliography: López-Palacios, Bol. Soc. Venez. Cienc. Nat. 31: 357 & 358. 1975; Moldenke, Phytologia 31: 457 (1975), 32: 56 (1975), and 34: 254. 1976.

Adams describes this plant as a shrub, 8 feet tall, the stems brittle, with pithy centers, and the corollas white. He encountered it at the margin of mangrove association, at an altitude of 10 feet, flowering in July.

Additional citations: JAMAICA: C. D. Adams 11364 (Mu, Mu).

CITHAREXYLUM ILICIFOLIUM H.B.K.

Additional bibliography: Buek, Gen. Spec. Syn. Candoll. 3: 105 & 147. 1858; Moldenke, Phytologia 31: 457--458 (1975) and 32: 60, 63, & 68. 1975; Soukup, Biota 11: 9. 1976.

Recent collectors describe this species as a shrub, 2--3 meters tall, the leaves opposite or ternate, the fruit dark-purple to black or "castaño-verdósulo", and have encountered it on riverbanks and in Eucalyptus forests, at 2900 meters altitude, flowering in February and December. The corollas are said to have been "white" on Hudson 1162, Humbles 6140, and López-Palacios 4167.

Additional citations: ECUADOR: Azuay: López-Palacios 4167 (Ld). Pichincha: Hudson 1162 (W-2788537); Humbles 6140 (N).

CITHAREXYLUM ILTISII Moldenke

Additional bibliography: Moldenke, Phytologia 31: 458--459. 1975; Soukup, Biota 11: 9. 1976.

CITHAREXYLUM INTEGERRIMUM (Kuntze) Moldenke

Additional bibliography: Moldenke, *Phytologia* 31: 459 (1975) and 32: 64 & 226. 1975.

The Kupper 1452, distributed as C. integrerrimum, actually is C. schottii Greenm.

CITHAREXYLUM xJAMAICENSE Moldenke

Additional bibliography: Moldenke, *Phytologia* 31: 459 (1975) and 40: 491. 1978.

Recent collectors describe this plant as a slender tree, 18—20 feet tall, the flowers sweet-scented, the corollas white, and have found it growing at the edge of woods, at 2300—2750 feet, flowering in March and May, and fruiting in March.

Most of the collections cited below were previously cited by me as C. fruticosum L., but it seems to me now that they probably represent the present hybrid.

Additional citations: JAMAICA: C. D. Adams 10812 (Mu, Mu); Anderson & Sternberg 3094 (Ld, Mi); Harris 8874 (B, Bm, Bm, N), 11065 (Bm, N, W—699857); Hespenheide, Hespenheide, Calver, & Ricklefs 976 (Ld), 1391 (Ld); Shreve s.n. [Mt. Diablo, May 28, 1906] (N).

CITHAREXYLUM JÖRGENSENII (Lillo) Moldenke

Additional bibliography: Moldenke, *Phytologia* 31: 459—460. 1975.

Recent collectors describe this plant as a treelet, 4 meters tall, the immature fruit subglobose and green, and have encountered it on the dry slopes of quebradas, at 1650 meters altitude, fruiting in November.

Additional citations: ARGENTINA: Salta: Schiavono, Cuezzo, Figuerroa, & Legname 11628c (N).

CITHAREXYLUM JURGENSENI Briq.

Additional bibliography: Moldenke, *Phytologia* 31: 460. 1975.

Additional citations: MEXICO: Nayarit: R. McVaugh 18920 (Ld).

CITHAREXYLUM KARSTENI Moldenke

Additional synonymy: Citharexylum dawei Moldenke in Fedde, *Repert. Sp. Nov.* 37: 220—221. 1934.

Additional & emended bibliography: Moldenke in Fedde, *Repert. Sp. Nov.* 37: 220—221 & 227—228. 1934; A. W. Hill, *Ind. Kew. Suppl.* 9: 67. 1938; Moldenke, *Known Geogr. Distrib. Avicenn.* 19 & 20. 1939; Moldenke, *Alph. List Common Names* 2. 1939; Moldenke, *Known Geogr. Distrib. Verbenac.*, [ed. 1], 31, 32, & 88. 1942; Moldenke, *Phytologia* 2: 96. 1945; Moldenke, *Alph. List Cit.* 1: 10, 145, 169, 221, & 243 (1946) and 2: 337, 424, 603, & 643. 1948; A. L. & H. N. Moldenke, *Pl. Life* 2: 55 & 66. 1948; Moldenke, *Known Geogr. Distrib. Verbenac.*, [ed. 2], 59, 62, & 179. 1949; Moldenke, *Alph. List Cit.* 3: 694, 758, 805, & 885 (1949) and 4: 1005, 1006, 1043, 1062,

1069, 1070, & 1078. 1949; Moldenke, *Phytologia* 6: 317—319 & 420—422 (1958) and 13: 284, 294, & 316. 1966; Moldenke, *Résumé Suppl.* 13: 6. 1966; Moldenke, *Phytologia* 14: 431—432. 1967; Moldenke, *Fifth Summ.* 1: 115, 122, & 429 (1971) and 2: 774, 858, & 859. 1971; López-Palacios, *Revist. Fac. Farm. Univ. Los Andes* 14: 22 (1974) and 15: 10—11 & 14—16. 1975; López-Palacios, *Bol. Soc. Venez. Cienc. Nat.* 31: [353]—354, 357—359, 369, 370, 373, 374, & 379—381. 1975; Moldenke, *Phytologia* 31: 348—350, 382, 394, & 460—461. 1975; López-Palacios, *Revist. Fac. Farm. Univ. Los Andes* 17: 41—42. 1976; López-Palacios, *Fl. Venez. Verb.* 220, 221, 223, 224, 227, 234—237, & 647. 1977; Moldenke, *Phytologia* 41: 57. 1978.

I am grateful to López-Palacios for confirming my suspicions that C. dawei is conspecific with C. karsteni. In a personal communication to me he lists the vernacular names, "agracejo" and "negrito" for C. karsteni. Uribe describes it as an "arbolito de 3 metros; folleja verde claro; flores blancas".

Additional & emended citations: COLOMBIA: Antioquia: Dawe 373 (B—photo, K, K, N, N—photo, S—photo, W, Z—photo). Boyacá: Karsten s.n. [Sogamoso] (N—photo, V, Z—photo). Cundinamarca: Uribe Uribe 5250 (N). VENEZUELA: Anzoátegui: Karsten s.n. [Piritu] (V).

CITHAREXYLUM KARSTENI var. **LANCEOLATUM** Moldenke

Additional bibliography: López-Palacios, *Bol. Soc. Venez. Cienc. Nat.* 31: 354, 358—359, 369, 370, 373, & 379—381. 1975; Moldenke, *Phytologia* 31: 460—461. 1975; López-Palacios, *Fl. Venez. Verb.* 220, 221, 223, 224, 234—237, & 647, fig. 53. 1977.

Illustrations: López-Palacios, *Fl. Venez. Verb.* [235], fig. 53. 1977.

López-Palacios refers to this plant as an "arbusto de 2—3 m. Hojas más claras por el envés, algo velutinosas, las viejas caducas rojizo anaranjadas. Flores blanco cremosas. Fruto inmaduro verdoso anaranjado" and found it growing at 2500 m. altitude, in flower and fruit in October. In his 1977 work he cites from Venezuela the following collections: Mérida: López-Palacios 1077; Ruiz-Terán & López-Figueiras 1793; Ruiz-Terán & López-Palacios 6213. Táchira: López-Palacios 3573. These were collected at altitudes of 800—1500 meters and on the label accompanying no. 1793 it is noted that the "Especie muy escasa en la localidad, sin usos conocidos".

Additional citations: COLOMBIA: Cundinamarca: López-Palacios 3908 (Ld, N). VENEZUELA: Mérida: Ruiz-Terán & López-Figueiras 1793 (Mu).

CITHAREXYLUM KOBUSKIANUM Moldenke

Additional bibliography: Moldenke, *Phytologia* 31: 461. 1975; Soukup, *Biota* 11: 9. 1976.

CITHAREXYLUM KUNTHIANUM Moldenke

Additional bibliography: Buek, Gen. Spec. Syn. Candoll. 3: 105. 1858; López-Palacios, Bol. Soc. Venez. Cienc. Nat. 31: 355, 359, & 364. 1975; Moldenke, Phytologia 32: 49, 57, & 220. 1975; López-Palacios, Revist. Fac. Farm. Univ. Los Andes 17: 42. 1976.

Recent collectors describe this species as a treelet, 4 m. tall, or a tree, 6--8 m. tall, with reddish or red fruit, and have found it growing in hillside thickets, at 900--2200 m. altitude, flowering in September and November, and fruiting in February, March, August, and September. The corollas are said to have been "white" on Flowman & Vaughan 5259 and "creamy-white" on López-Palacios & Espinal T. 4314. Vernacular names reported for it are "hoja blanca", "palo blanco", and "pendo".

López-Palacios & Idrobo refer to the species as an "árbol 8--10 m. [or] arbolito de 4 m. Hojas opuestas discoloras, envés tomentoso. Inflorescencias terminales. Flores de corola blanca, 5-mera, séviles, fragantes". López-Palacios (1976) notes, quite truly, that "Es difícil de distinguirlo del C. subflavescens, y las diferencias de color de indumento y presencia y ausencia de glándulas, que les señales el Dr. Moldenke, no son del todo convincentes. No sé si valiera la pena ensayar una separación por pisos térmicos y dejar en el C. kunthianum los ejemplares de tierra caliente y en el C. subflavescens los de tierra fría."

Material of C. kunthianum has been misidentified and distributed in some herbaria as C. subflavescens Blake.

Additional citations: COLOMBIA: Antioquia: López-Palacios & Espinal T. 4314 (Ld). Cauca: López-Palacios & Idrobo 3756 (Ld, N, Ws). Nariño: Espinal T. 1076 (Ld); López-Palacios & Idrobo 3827 (N, Z). Valle del Cauca: Cuatrecasas 23017 (W--2817328), 23691 (W--2817329); López-Palacios & Idrobo 3702 (Ac, N); Flowman & Vaughan 5259 (Ld). CULTIVATED: Ecuador: Asplund 16986 (N).

CITHAREXYLUM LAETUM Hiern

Additional bibliography: Moldenke, Phytologia 32: 50. 1975; Hocking, Excerpt. Bot. A.28: 258. 1976.

Because of a typographic error, the name for this species appears as "L. laetum" in Hocking (1976).

CITHAREXYLUM LANKESTERI Moldenke

Additional bibliography: Moldenke, Phytologia 32: 50, 57, & 58. 1975.

Fosberg reports this species "common in forest filling deep ravines in pasture; tree 10 m. tall; spikes pendent, flowers white", and found it growing at 2800 meters altitude on the slopes of Irazu volcano, flowering in October.

Additional citations: COSTA RICA: Cartago: F. R. Fosberg 43269 (N).

[to be continued]